REMARKS/ARGUMENTS

Claims 1, 3-7, 9, and 10 are pending in this application.

Claims 1, 3-7, 9, and 10 had been rejected under 35 U.S.C. § 103(a) over Homma *et al*, US 4,907,287, in view of Zaluzec, US 6,548,810 B2, and Tsuneta *et al.*, US 6,570,156 B1. This rejection is respectfully traversed for the following reasons.

Claims 1, 3-7, 9, and 10 comprise sending control signals to a positioning means to cause a motion of the positioning means to compensate for changes in the observable image of a specimen scanned by an illuminating light beam in an optical microscope.

Zaluzec does not teach or suggest this element.

Homma describes an image correction system for a scanning electron microscope. Homma's system is designed to compensate for image blur and distortions caused by mechanical vibrations and magnetic fields of the microscope power sources.

As it has already been argued by Applicant, in Homma, "Fig. 20 shows another embodiment of the present invention which is adapted to be used for a SEM [scanning electron microscope] . . . in which the image shift is corrected by directly varying the scan control signal of an electron beam scanning system . . . The data representative of the shift determined by the [image shift detecting] unit 59 undergoes data translation to be converted into a scan position signal through a shift-scan position converter 62. The output signal of the converter 62 is then converted to an analogue signal through a D/A converter 63 to be subsequently applied to the electron beam scanning system 64 for changing the scanning position. According to this embodiment, not only the vibration of image can be prevented but also the specimen under observation can be protected against disappearance from the field of view." Column 19, line 53 – column 20, line 5.

Varying the scan control signal of an electron beam in Homma, contrary to the present invention, does not involve any motion of any positioning means, because Homma does not describe any motion of the scanning system, and the moving electron beam in Homma is not a positioning means. The moving electron beam is not a positioning means performing positioning of anything.

According to Examiner (pending final Office Action, page 4), "Tsuneta teaches that beam positioning and stage positioning are art-recognized equivalents for compensation of image shifts in the microscope art (column 26, lines 8-49)."

Tsuneta teaches moving the stage as an alternative to moving the beam in an electron microscope. However, contrary to the present invention, Tsuneta does not teach moving positioning means in combination with moving the beam along the specimen in the scanning process.

The present invention's combination of beam scanning and a motion of the positioning means is excluded and contravened by Tsuneta's consistent approach to moving the beam and moving the stage as alternatives to each other, against combining the compensatory movement of the stage with the scanning movement of the beam as claimed in Claims 1, 3-7, 9, and 10. See, for example, in the part quoted by Examiner, Tsuneta column 26, lines 23-25: "each fine tuning mechanism for x-, y-, z-axis respectively attached to the specimen stage 18 may be used to move it to change the field of view, or alternatively the deflective coil for condenser system 16 may be used to transfer the position of electron beam."

In the pending final Office Action, pages 4-5, Examiner argues that moving positioning means in combination with moving the beam along the specimen in the scanning process is not recited in the Claims 1, 3-7, 9, and 10. Applicant respectfully disagrees.

Each of the Claims 1, 3-7, 9, and 10 recites control signal causing a motion of optical means and recites a scanning module scanning a specimen with an illuminating light beam. Each claim recites and comprises this combination of elements.

Furthermore, the focus when making a determination of obviousness should be on what a person of ordinary skill in the pertinent art would have known at the time of the invention, and on what such a person would have reasonably expected to have been able to do in view of that knowledge. The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention.[1]

The art pertinent to the present invention is optical microscopy, and combining Zaluzec with Homma and Tsuneta would not be obvious to a person of ordinary skill in this art, because such a person would not know of Zaluzec, Homma, or Tsuneta, as Zaluzec, Homma, and Tsuneta deal exclusively with electron microscopy, which is fundamentally different from optical microscopy.

Electron microscopy uses electron beams. Optical microscopy uses light beams.

An electron beam is a stream of charged particles called electrons. A light beam is a beam of electromagnetic radiation; a light beam does not comprise any charged particles.

Producing an electron beam is completely different from producing a light beam. An electron beam in an electron microscope is manipulated by sources of electromagnetic field which are completely different from lenses, prisms, mirrors, and other reflective and transmissive devices used for the manipulating beams in optical microscopy. And, finally, detecting a reflection of electron beam from a specimen uses different principles and different devices compared with principles and devices used for detecting reflection of a light beam. A person of ordinary skill in the optical microscopy cannot be reasonably expected to know developments in the electron microscopy as these arts are very different, separate and apart from each other.

Examiner asserts that Zaluzec "includes lenses to manipulate the beam and therefore can be considered optical" (pending final Office Action, page 5) and that

"Zaluzec teaches in fig. 4 a scanning electron microscope which is an optical microscope (see lenses in system, e.g., 404) and includes an illuminating light beam (from 402) and a detected light beam (to 412); . . . a scanning module (416) which guides the illuminating light beam as it scans the specimen generating the detected light beam; a detector module having at least one detector (412) detecting at least a part of the detected light beam; . . ." (pending final Office Action, pages 3-4).

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[1] MPEP 2141

Applicant respectfully disagrees. In Zaluzec, Fig. 4 shows a SCEM (Scanning Confocal **Electron** Microscope) 400.

"The illumination source **402** providing principle penetrating radiation for the SCEM [Scanning Confocal **Electron** Microscope] 400 is a high-energy, high-brightness, **electron beam** illumination source operated in the range of 100-1000 kV, the typical operating values being 300-400 kV for application to the observations of a nominal 8 micron thick semiconductor sample. SCEM [Scanning Confocal **Electron** Microscope] 400 preferably employs a field emission **electron source**, however, instruments of lesser capability can be constructed using alternative **electron sources** such as Lanthamium Hexabordie (LaB6), or Tungsten (W) systems. These lesser systems generally will require additional pre-specimen lenses **404** to achieve comparable performance. In addition to the electron source, the illumination source **402** may include associated lenses, apertures and related peripherals needed to create a well-formed **electron beam**." Zaluzec, col. 10, lines 28-42.

In Zaluzec, lenses 404 manipulate an electron beam, not an optical (i.e. light) beam; the source 402 produces an electron beam, not a light beam; the detector 412 detects an electron beam, not a light beam; the scanning system 416 deflects an electron beam, not a light beam; and the beam penetrating through the specimen 406 is an electron beam, not a light beam. See Zalutec, col. 7, line 23 – col. 8, line 55.

Zaluzec teaches in Fig. 4 a scanning electron microscope which is **not** an optical microscope.

As explained hereinabove, sending control signals to a positioning means to cause a motion of the positioning means to compensate for changes in the observable image of a specimen scanned by an illuminating light beam in an optical microscope is not taught or suggested in Homma, Zaluzec, Tsuneta, or their combination. Furthermore, a person of ordinary skill in optical microscopy would not be aware of Homma and Tsuneta because of the remoteness and separateness of fields of optical microscopy and electron microscopy. Therefore, Claims 1, 3-7, 9, and 10 are non-obvious over Homma, Zaluzec, and Tsuneta under 35 U.S.C. § 103(a) and should be allowed.

It is believed that the present application is in condition for allowance. A Notice of Allowance is respectfully solicited in this case. Should any questions arise, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

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